S/0020/64/154/006/1402/1405

ACCESSION NR: AP4019980

AUTHOR: Teleshov, E. N.; Teleshova, A. S.; Desyatova, N. V.; Pravednikov, A. N.; Medvedev, S. S. (Academician)

TITLE: Gas release and formation of double bonds during radiolysis of polyisobutylene (PIB)

SOURCE: AN SSSR. Doklady*, v. 154, no. 6, 1964, 1402-1405

TOPIC TAGS: gas, double bond, radiolysis, polyisobutylene, Co sup 60, linear electron accelerator, free radical

ABSTRACT: Industrial polyisobutylene films, prepared by evaporation of weak solutions of a polymer in carbon tetrachloride were used. Co^{60} (about 20 000 gm-equivalent Ra) and a linear electron accelerator (200 kev) were the source of ionizing radiation. Before irradiation, the films were evacuated to about 10^{-5} MM Hg during heating to 70C for 24 hours. The degree of destruction was estimated from viscosimetric data. The results indicate that the loss of free radicals in PIB at a temperature above the vitrification temperature is not accompanied by either a formation of gaseous products or the development of double bonds in the

ACCESSION NR: AP4019980

polymer. Orig. art. has: 4 figs., 2 tables.

ASSOCIATION: none

SUBMITTED: 24Oct63 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: CH NO REF SOV: 003 OTHER: 005

Card 2/2

TEL[illegible]OV, V. A., [illegible], [illegible], [illegible], [illegible],
[illegible], E. [illegible]

"Hygienic characteristics of polytechnical teaching in a rural school."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.

YUR'YEV, V.M.; TELESHOVA, A.S.; APTEKAR', Ye.L.; ARDASHNIKOV, A.Ya.;
REZNIKOVA, O.Ya.; PRAVEDNIKOV, A.N.

Use of ion-sorption ESh-1 pumps in the MI-1305 mass-spectrometer.
Zav.lab. 30 no.3:375-376 '64. (MIRA 17:4)

1. Nauchno-issledovatel'skiy fiziko-khimicheskiy institut imeni Karpova.

S/0020/64/154/006/1402/1405

ACCESSION NR: AP4019980

AUTHOR: Teleshov, E. N.; Teleshova, A. S.; Desyatova, N. V.; Pravednikov, A. N.; Medvedev, S. S. (Academician)

TITLE: Gas release and formation of double bonds during radiolysis of polyisobutylene (PIB)

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ABSTRACT: Industrial polyisobutylene films, prepared by evaporation of weak solutions of a polymer in carbon tetrachloride were used. Co^{60} (about 20 000 gm-equivalent Ra) and a linear electron accelerator (200 kev) were the source of ionizing radiation. Before irradiation, the films were evacuated to about 10^{-5} MM Hg during heating to 70C for 24 hours. The degree of destruction was estimated from viscosimetric data. The results indicate that the loss of free radicals in PIB at a temperature above the vitrification temperature is not accompanied by either a formation of gaseous products or the development of double bonds in the

Card 1/2

ACCESSION NR: AP4019980

polymer. Orig. art. has: 4 figs., 2 tables.

ASSOCIATION: none

SUBMITTED: 24Oct63 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: CH NO REF SOV: 003 OTHER: 005

Card 2/2

TELESHOVA, M.N.; VIGALOK, R.V.; VASIL'YEVA, A.A.

Investigating the individual hydrocarbon composition of gasolines. Neftoper. i neftekhim. no. 11:27-30 '63. (MIRA 17:5)

1. Tatarskiy nauchno-issledovatel'skiy institut, g. Kazan'.

TELESHOVA, M.N.; VASIL'YEVA, A.A.; SEMKIN, V.I.

Individual composition of gasoline from crude oil of the Novo-Elkhovsk field of the Tatar A.S.S.R. Khim. i tekh. topl. i masel 8 no.10:14-16 O '63. (MIRA 16:11)

1. Tatarskiy neftyanoy nauchno-issledovatel'skiy institut.

VOL'FSON, I.S.; TELESHOVA, M.N. Prinimali uchastiye: SHEYKH-ALI, G.A.; KAMALOVA, R.K.; SHERGINA, E.G.; SHASHINA, A.D.

New oil field in the Tatar A.S.S.R. Khim. i tekh. topl. i masel 9 no.5:29-31 5 My'64 (MIRA 17:7)

1. Tatarskiy neftyanoy nauchno-issledovatel'skiy institut.

DORFMAN, M.D.; GORSHKOV, A.I.; TELESHOVA, R.L.

Celadonite from the Khibiny Mountains. Trudy Min.muz. no.16:225-232 '65. (MIRA 18:8)

GINZBURG, I.V.; MALEYEV, Ye.F.; SIDORENKO, G.A.; TELESHOVA, R.L.

New find of pigeonite in the U.S.S.R. Dokl. AN SSSR 159 no.6:
1301-1304 D '64 (MIRA 18:1)

1. Mineralogicheskiy muzey im. A. Ye. Fersmana AN SSSR i Institut vulkanologii Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom V.S. Sobolevym.

BING, R.G.; KAZARINOV, N.D. (Madison, Wiskonsin, SShA); KAZHDAN, I.A., (studentka 4-go kursa); MAS'KO, S.S. (studentka 4-go kursa); DORFMAN, A.G. (Gor'kiy); KUZHEL', A.V. (Uman'); SKOPETS, Z.A. (Yaroslavl'); TELESIN, Yu.Z. (Moskva)

Brief notes. Mat.pros. no.6:205-216 '61. (MIRA 15:3)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut imeni Lenina (for Kazhdan, Mas'ko).

(Mathematics--Problems, exercises, etc.)

NECHAYEV, V.I.; TELESIN, Yu.Z.

Exact value of G(f, a) for sequences of polynomials of the 2d degree. Uch. zap. MGPI no.188:131-138 '62. (MIRA 16:9)
(Polynomials)

TELESINSKI, J.

Electrical Engineering Abst.
Vol. 57 No. 676
Apr. 1954.
Electrical Engineering

2

① Electronics - mach[illegible]

621.313.322.013.8

1394. Forcing of the excitation of synchronous generators, I-II. J. TELESINSKI. *Energetyka*, 7, *No.* 5, 219-27; *No.* 6, 281-6 (1953) In *Polish*.

In order to obtain a better stability of a network and avoid falling out of generators on overload, the excitation is increased by short-circuiting the regulating resistances. Conditions are enumerated which must be satisfied before deciding to apply the forcing. The protective relaying must be altered to suit. A practical example is given.

A. KARLSBAD

6-31-54

TELESINSKI, J.

Present state of protective relaying and systematic automation in Soviet elctric power engineering. p. 232.

(Minsterstwo Energetyki) Stalinogrod.
Vol. 9, no. 5, Sept./Oct. 1955
The help of Soviet electric power engineers to the Polish electric power engineers p. 225

So. East European Accessions List Vol. 5, No. 1, Jan. 1956

PA 175T94

TELESNIN, N. L.

21 Jun 50

USSR/Physics - Ultrasonics
Interferometers

"Traveling-Wave Ultrasonic Interferometer," N. L. Telesnin, V. A. Krasil'nikov, Sci Res Inst Phys, Moscow State U imeni Lomonosov

"Dok Ak Nauk SSSR" Vol LXXII, No 6, pp 1037-1039

Usual method of measuring velocity of ultrasounds in liquids and gases is by Pierce's interferometer with standing waves. Describes here another method, which uses traveling ultrasonic waves instead and cathode-ray tube (Lissajous figures) and involves displacing receiver and varying frequency. Submitted 25 Apr 50 by Acad B. A. Vvedenskiy.

175T94

FDD

TELESNIN, N. L.

GROSZKOWSKI, Janusz, professor, doktor, inzhener; BULAT, V.L., [translator]; SHEMBEL', B.K., redaktor; TELESNIN, N.L., redaktor; NIKIFOROV, A.N., tekhnicheskiy redaktor

[Generation of high-frequency ocillations and the stabilization of frequency. Translated from the Polish] Generirovanie vysokochastotnykh kolebanii i stabilizatsiia chastoty. Per. s pol'skogo B.L.Bulata. Pod red. B.K.Shembelia. Moskva, Izd-vo inostrannoi lit-ry, 1953. 363 p. (MLRA 8:7)

(Oscillators, Electron-tube)

HUGHES, D.J.; TELESNIN, N.L., redaktor; GERASIMOVA, Ye.S., tekhnicheskiy
redaktor.

[Pile neutron research] Neitronnye issledovaniia na iadernykh kotlakh. Perevod s angliiskogo. Moskva, Izd-vo inostrennoi lit-ry,
1954. 479 p. (MLRA 7:8)
(Neutrons) (Nuclear reactors)

TELESNIN N. L.

VONSOVSKIY, S.V., redaktor; SHUBINA, L.A. [translator]; TELESNIN, N.L., redaktor; NIKIFOROVA, A.N., tekhnicheskiy redaktor.

[Elasticity and anelasticity of metals; collection of articles. Uprugost' i neuprugost' metallov; sbornik. Perevod L.A.Shubinoi. Moskva, Izd-vo inostrannoi lit-ry, 1954. 396 p. [Microfilm]
(Elasticity) (Metals) (MLRA 7:11)

TELESNIN, N.L.

TOLANSKIY, S.; STRIGANOV, A.R. [translator]; LANDSBERG, G.S., akademik, redaktor; TELESNIN, N.L., redaktor; GERASIMOVA, Ye.S., tekhnicheskiy redaktor

[High resolution spectroscopy] Spektroskopiia vysokoi razreshaiushchei sily. Per. A.R.Striganova, pod red. i s predisloviem G.S. Landsberga. Moskva, Izd-vo inostrannoi lit-ry, 1955. 436 p.
(Spectrum analysis) (MLRA 8:7)

TELESHIN, N.L.

LYAMSHEV,L.M.; SUKHAREVSKIY,Yu.M., doktor tekhnicheskikh nauk, redaktor; TELESHIN,N.L., redaktor; MAKUNI,Ye.V., tekhnicheskiy redaktor

[Reflection of sound by thin plates and shells in liquids] Otrazhenie zvuka tonkimi plastinkami i obolochkami v zhidkosti. Moskva, Izd-vo Akademii nauk SSSR, 1955. 70 p. (MLRA 9:2)
(Sound waves)

AL'PERT, Ya.L.; BREKHOVSKIKH, L.M., redaktor; TELESNIN, N.L., redaktor;
ZELENKOVA, Ye.V., tekhnicheskiy redaktor.

[Diffusion of electromagnetic low-frequency waves over the earth's surface] O rasprostranenii elektromagnitnykh voln nizkoi chastoty nad zemoi poverkhnost'iu. Moskva, Izd-vo Akademii nauk SSSR, 1955. 111 p. (MLRA 8:12)
(Electric waves)

TELESNIN, N.L.

HUGHES,D.J.; BURSHTEYN,E.L. [translator]; PEVZNER,M.I., redaktor;
TELESNIN,N.L., redaktor; IOVLEVA,N.A., tekhnicheskiy redaktor

[Neutron optics. Translated from the English] Neitronnaia optika. Perevod s angliiskogo E.L.Burshteina. Moskva, Izd-vo inostrannoi lit-ry, 1955. 154 p. (MIRA 9:2)
(Optics, Physical) (Neutrons)

Teleshin, N. L.

NAZAROV, S.T., redaktor; TELESHIN, N.L., redaktor; MOSKVICHEVA, N.I., tekhnicheskiy redaktor [illegible]

[Using gamma rays in defect detection of metals] Gamma-defektoskopiia metallov; sbornik statei. Moskva, 1955. 142 p. [Microfilm] (MIRA 9:3)

1. Akademiya nauk SSSR.
(Gamma rays--Industrial applications) (Metallography)

SHUBINA, L.A. [translator]; VONSOVSKIY, S.V., redaktor; TELESNIN, N.L., redaktor; GERASIMOVA, Ye.S., tekhnicheskiy redaktor

[Antiferromagnetism; a collection of articles. Translations] Antiferomagnetizm; sbornik statei. Perevod L.A.Shubinoi. Pod red. S.V.Vonsovskogo. Moskva, Izd-vo inostrannoi lit-ry, 1956. 487 p. (MIRA 10:3)

(Ferromagnetism)

L'YUIS, I. [Lewis, I.A.D.],; UELS, F. [Wells, F.H.],; DULIN, V.N., [translator],; ABRAMSON, I.S., red.; MOGILEVSKIY, A.N., red.; TELESNIN, N.L., red.; SMIRNOVA, N.I., tekhn. red.

[Millimicrosecond pulse techniques] Millimikrosekundnaia impul'snaia tekhnika. Moskva, Izd-vo inostr. lit-ry, 1956. 367 p. [Translated from the English]. (MIRA 11:12)
(Pulse techniques(Electronics))
(Microwaves)

ENDRYU, E. [Andrew, E.R.],; POMERANTSEV,N.M.,[translator],; SKUBUR,
Ye. N.,[translator],; LAZUKIN, V.N., red.; TELESNIN, N.L., red.
SOKOLOVA, T., tekhn. red.

[Nuclear magnetic resonance] IAdernyi magnitnyi rezonans. Moskva,
Izd-vo inostr. lit-ry, 1957. 299 p. [Translated from the English].
(MIRA 11:11)

(Nuclear moments)
(Magnetism)

GROSHKOVSKIY, Yanush [Groszkowski, Janusz], prof., Dr.inz.; BULAT, V.L.,
dotsent [translator]; **REYKHRUDEL'**, E.M., prof., red.; TELESNIN,
N.L., red.; GRIBOVA, M.P., tekhn.red.

[High-vacuum technology] Tekhnologiia vysokogo vakuuma. Pod red.
E. M. Reikhrudelia. Moskva, Izd-vo inostr.lit-ry, 1957. 539 p.
(Vacuum) (MIRA 12:2)

[illegible]

MENZEL, Donald H., red.; KAZARNOVSKIY, M.V. [translator]; TIKHOMIROV, F.A. [translator]; ARNOL'D, N.A. [translator]; PETRUKHIN, V.I. [translator]; MATSONASHVILI, B.N. [translator]; AKSENOV, S.I. [translator]; BAKANOV, S.P. [translator]; SHAPIRO, I.S., red.; ADIROVICH, E.I., red.; MEDVEDEV, Yu.T., red.; NAKHIMSON, I.G., red.; TELESNIN, N.L., red.; BELEVA, M.A., tekhn.red.

[Fundamental formulas of physics. Translated from the English] Osnovnye formuly fiziki. Moskva, Izd-vo inostr. lit-ry, 1957. 657 p. (MIRA 11:5)

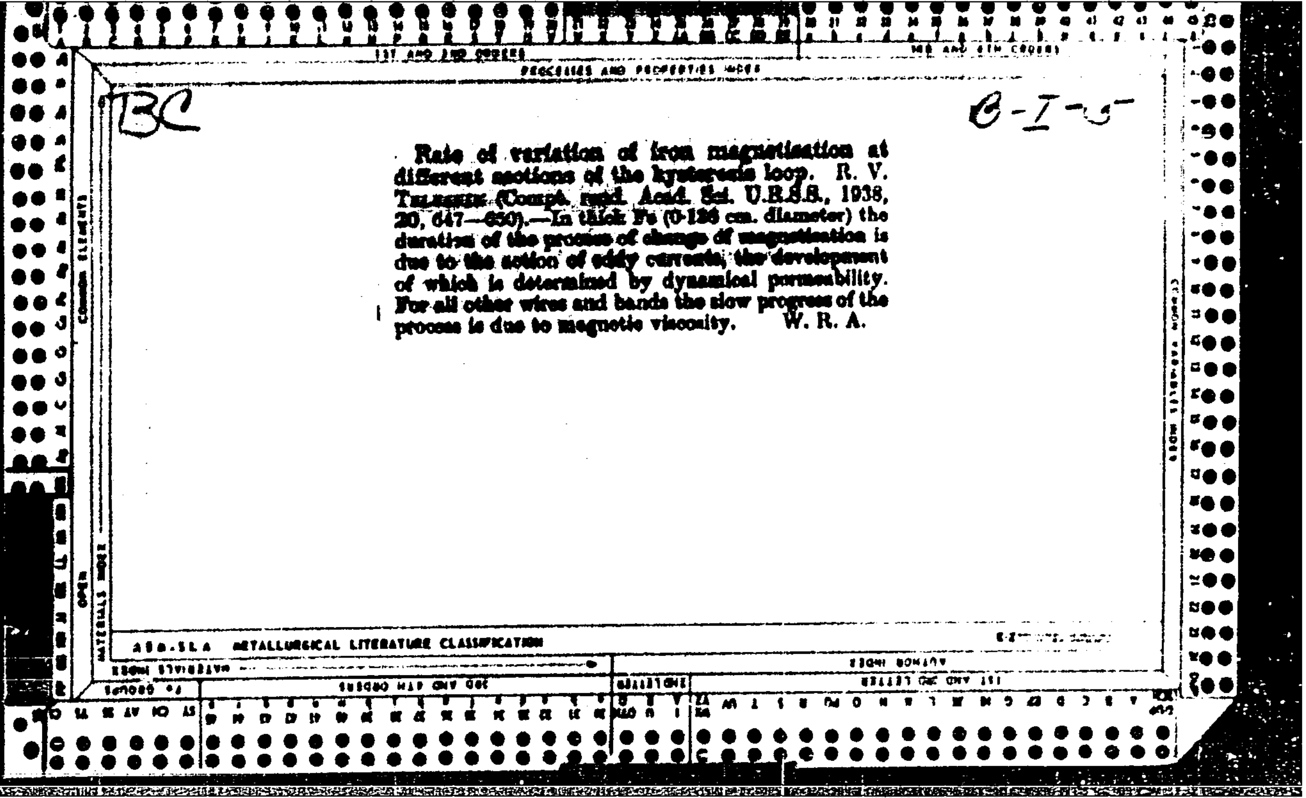
(Mathematical physics)

VOL'KENSHTEYN, M.V., red.; TELESNIN, N.L., red.; BELEVA, M.A.,
tekhn.red.

[Physics of polymers; collected articles] Fizika polimerov;
sbornik statei. Moskva, Izd-vo inostr.lit-ry, 1960. 551 p.
(Polymers) (MIRA 13:8)

TAUTS, Ya. [Tauc, Jan], prof.; MIKHAYLOVA, M.P. [translator];
KOLOMIYETS, B.T., red.; TELESNIN, N.L., red.; REZOUKHOVA,
A.G., tekhn. red.

[Photoelectric and thermoelectric effect in semiconductors]
Foto- i termoelektricheskie iavleniia v poluprovodnikakh.
Pod red. B.T.Kolomiitsa. Moskva, Izd-vo inostr. lit-ry,
1962. 250 p. (MIRA 16:5)
(Semiconductors)



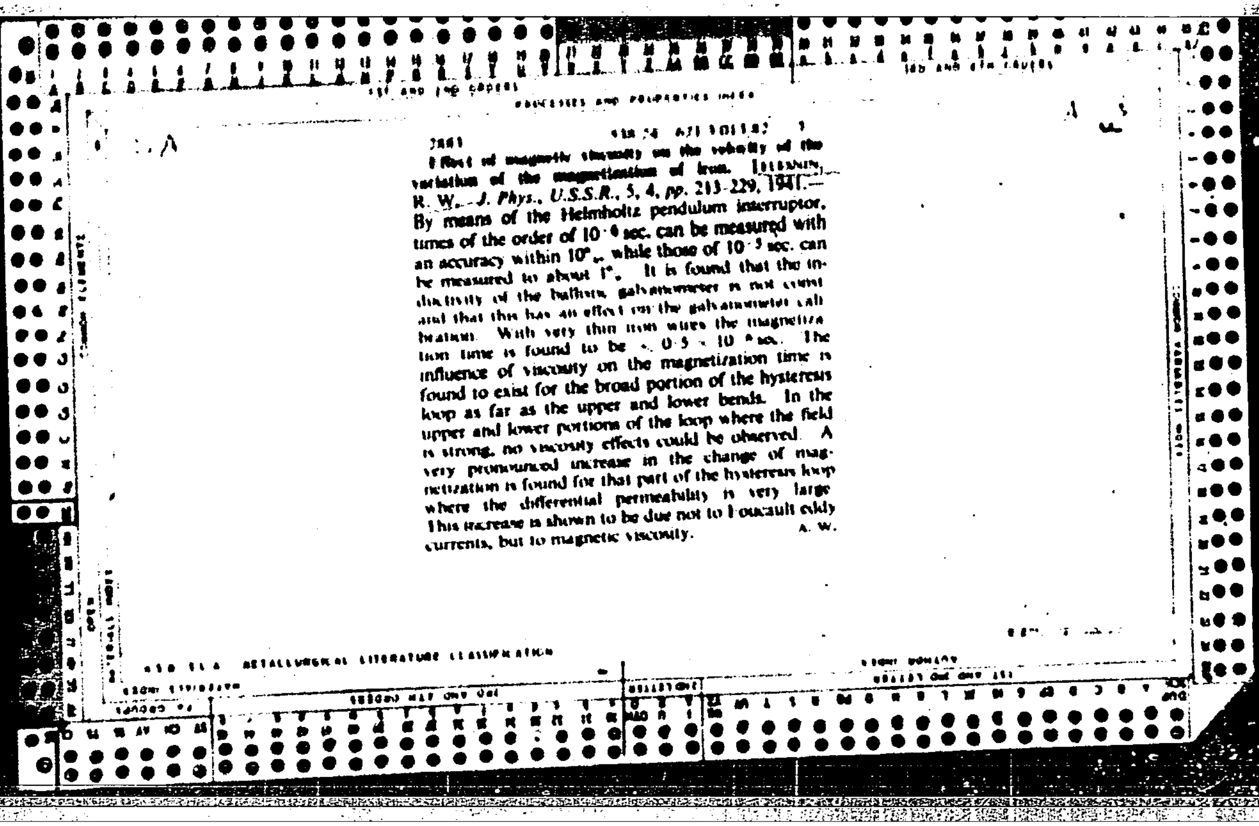
1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
3RD AND 4TH ORDERS

BC

6-I-5

Rate of variation of iron magnetisation at different sections of the hysteresis loop. R. V. TELESNIN (Compt. rend. Acad. Sci. U.R.S.S., 1938, 20, 647—650).—In thick Fe (0·126 cm. diameter) the duration of the process of change of magnetisation is due to the action of eddy currents, the development of which is determined by dynamical permeability. For all other wires and bands the slow progress of the process is due to magnetic viscosity. W. R. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

538.24 621.301.82

2881

Effect of magnetic viscosity on the velocity of the variation of the magnetization of iron. Lessnus, R. W.—*J. Phys., U.S.S.R.*, 5, 4, *pp.* 213-229, 1941.—By means of the Helmholtz pendulum interruptor, times of the order of 10^{-4} sec. can be measured with an accuracy within 10%, while those of 10^{-3} sec. can be measured to about 1%. It is found that the inductivity of the ballistic galvanometer is not const and that this has an effect on the galvanometer calibration. With very thin iron wires the magnetization time is found to be $< 0.5 \times 10^{-4}$ sec. The influence of viscosity on the magnetization time is found to exist for the broad portion of the hysteresis loop as far as the upper and lower bends. In the upper and lower portions of the loop where the field is strong, no viscosity effects could be observed. A very pronounced increase in the change of magnetization is found for that part of the hysteresis loop where the differential permeability is very large This increase is shown to be due not to Foucault eddy currents, but to magnetic viscosity. A. W.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

TELESNIN, R. V.

PA-24T65

USSR/Metals **Jan 1947**
Nickel
Permalloy

"The Magnetic Viscosity of Nickel and Permalloy Under Tension," R. V. Telesnin, Lecturer, M. I. Chulkova, L. Ya. Rudaya, 6 pp

"Vestnik Moskovskogo Universiteta" No 1

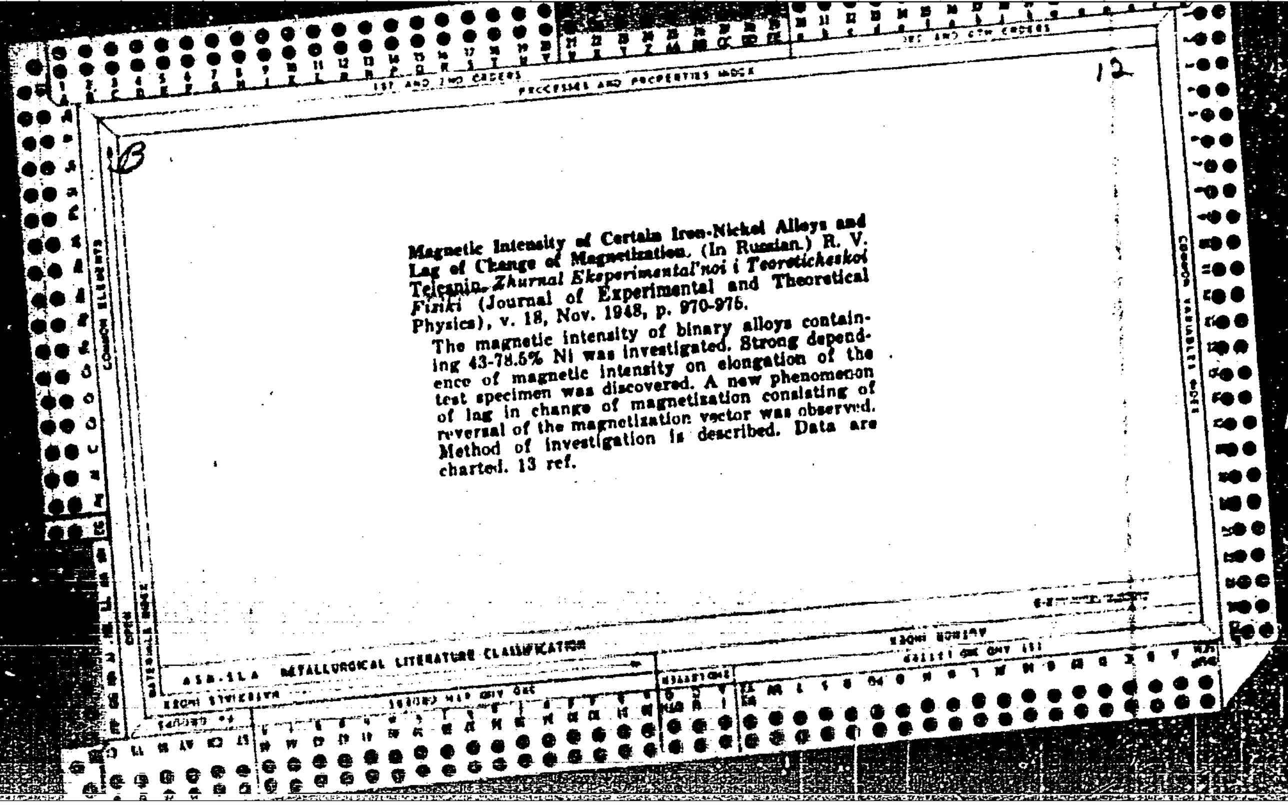
The initial stage of the magnetic viscosity of extended nickel and permalloy have been studied by means of a Helmholz pendulum interpreter. A strong influence of the magnetic viscosity on the velocity of the change in the magnetization of the extended nickel and permalloy has been discovered.

24T65

TELESNIN, R. V.

Telesnin, R. V. - "New effects in magnetic viscosity," Vestnik Mosk. un-ta,
1948, No. 11, p. 61-87

So: U-3566, 15 march 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)


1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
3RD AND 4TH ORDERS
COMMON ELEMENTS
COMMON VARIABLES INDEX
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION
MATERIALS INDEX
OPEN
12
B

Magnetic Intensity of Certain Iron-Nickel Alloys and Lag of Change of Magnetization. (In Russian.) R. V. Telesnin. *Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki* (Journal of Experimental and Theoretical Physics), v. 18, Nov. 1948, p. 970-976.

The magnetic intensity of binary alloys containing 43-78.5% Ni was investigated. Strong dependence of magnetic intensity on elongation of the test specimen was discovered. A new phenomenon of lag in change of magnetization consisting of reversal of the magnetization vector was observed. Method of investigation is described. Data are charted. 13 ref.

M

2

***On the Phenomenon of Delay in Magnetization Jumps [in Iron-Nickel-Copper Alloy].** R. V. Telesnin (*Doklady Akad. Nauk S.S.S.R.*, 1948, **60**, (5), 887-888).—[In Russian]. Magnetic viscosity curves were determined for various parts of the hysteresis loop in a 25-cm.-long, 1-mm.-dia. wire specimen made of annealed alloy contg. Ni 43, Fe 56, and Cu 1%, subjected to tensile stresses of 0-66 kg./mm.^{2}. Starting with a tension of 6·6 kg./mm.^{2}, lags of up to 3 min. occurred in magnetization jumps following changes in the magnetic field. With increasing tension, the effect, which had initially been observed for a single point of the hysteresis loop, was discovered at various other points covering finally the region of +2 to −6 Oe. 8 ref.—A. G.

ASM

393-P. (Russian.) **Investigation of Certain Rapid Processes in Iron During an Aperiodic Change of the Field.** R. V. Telesnin. "Uchenye Zapiski. Vypusk 134. Fizika. Kniga Piataia" (Scientific Records. Vol. 134. Physics. Vol. 5), Lomonsov's Moscow State University, 1949, p. 63-92.

A study was made of the rate of magnetization and of demagnetization of iron in toroids, wires, and foils. Hysteresis loops for various conditions. 26 ref. (P16, Fe)

ASM

394-P. (Russian.) Eddy Currents in Non-Magnetic, Metallic Cylinders and Plates. R. V. Telesnin. "Uchenye Zapiski. Vypusk 134. Fizika. Kniga Piataia" (Scientific Records Vol. 134. Physics. Vol. 5), Lomonsov's Moscow State University, 1949, p. 93-99.

A theoretical discussion. Results of experiments on Cu, Al, brass, and Zn specimens. (P16, Cu, Al, Zn)

Doc Physicomath Sci

TELESNIN, R. V.

Dissertation: "On Certain Regularities of Magnetic Viscosity."
15/11/50

Moscow Order of Lenin State U imeni M. V. Lomonosov

SO Vecheryaya Moskva
Sum 71

TELESHIN, R. V.

Alloys.

Magnetic force of well-organized ferromagnetic alloys. Vest. Mosk. un. 5, no. 8, 1950.

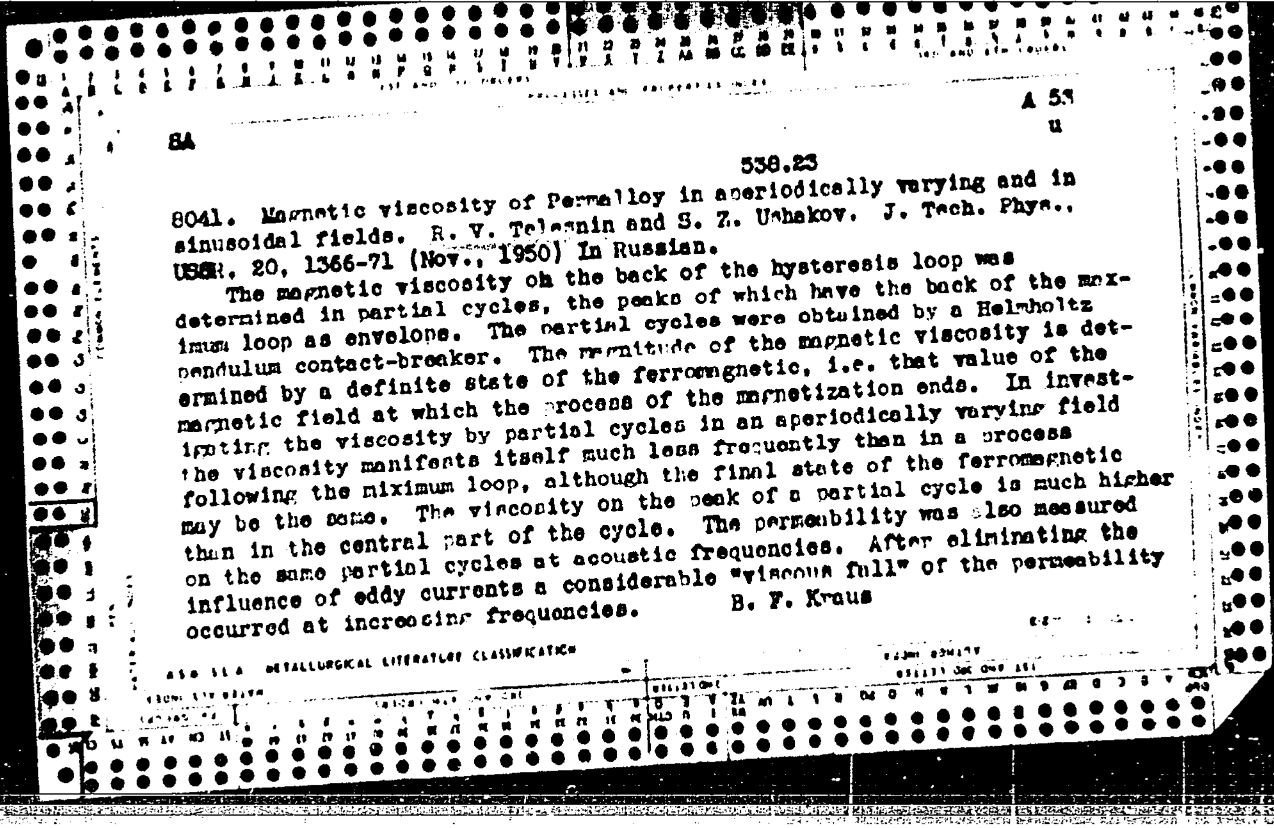
9. Monthly List of Russian Accessions, Library of Congress, November 195~~3~~2, Uncl.

TELESNIN, R.V.

Magnetism

New method of observing ultramagnetic force. Vest. Mosk. un 5, No. 10, 1950

9. Monthly List of Russian Accessions, Library of Congress, November 1952 ~~1953~~, Uncl.



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538.23

8041. Magnetic viscosity of Permalloy in aperiodically varying and in
sinusoidal fields. R. V. Telesnin and S. Z. Ushakov. J. Tech. Phys.,
USSR, 20, 1366-71 (Nov., 1950) In Russian.
The magnetic viscosity on the back of the hysteresis loop was
determined in partial cycles, the peaks of which have the back of the max-
imum loop as envelope. The partial cycles were obtained by a Helmholtz
pendulum contact-breaker. The magnitude of the magnetic viscosity is det-
ermined by a definite state of the ferromagnetic, i.e. that value of the
magnetic field at which the process of the magnetization ends. In invest-
igating the viscosity by partial cycles in an aperiodically varying field
the viscosity manifests itself much less frequently than in a process
following the maximum loop, although the final state of the ferromagnetic
may be the same. The viscosity on the peak of a partial cycle is much higher
than in the central part of the cycle. The permeability was also measured
on the same partial cycles at acoustic frequencies. After eliminating the
influence of eddy currents a considerable "viscous full" of the permeability
occurred at increasing frequencies. B. F. Kraus

METALLURGICAL LITERATURE CLASSIFICATION

ma

On Certain Laws Governing Magnetic Viscosity. R. V.
Telesnin. (*Doklady Akad. Nauk S.S.S.R.*, 1950, 75, (6),
855-860; *Physics Abs.*, 1951, 54, 422).—[In Russian]. T.
claims to have established (1937-48) the proportionality of
the magnitude of magnetic viscosity to the magnitude of the
differential receptivity $\chi d = dJ/dH$. The theory proposed
by Street and Woolley (*Proc. Phys. Soc.*, 1949, [A], 62, 562;
M.A., 17, 645) does not include T.'s proportionality between
the time of relaxation and χd. He shows how it may be
allowed for, with the result that (rule I) relaxation time is
found to be directly ∝ differential receptivity and inversely
∝ abs. temp. It is argued accordingly that (rule II) viscosity

does not depend on the magnitude of the change within the
field, ΔH (unless the latter is very small), but merely on the
final condition of the ferromagnetic substance.

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ma

1 **The Dependence of Magnetic Viscosity on Temperature.** R. V. Telesnin and E. F. Kuritsyna (*Doklady Akad. Nauk S.S.S.R.*, 1950, 75, (6), 797-798; *Physics Abs.*, 1951, 54, 422). —[In Russian]. Describes the appn. of rule I in T.'s previous paper (see preceding abstract) to a particular substance (Ni from 86° to 615° K., i.e. practically to the Curie point). Diagrams show: (i) curves of relaxation time and of differential receptivity in relation to abs. temp.; (ii) curves of magnetization, hysteresis, and the curves of (i) at different temp.; (iii) the values of the coeff. *A* at different temp., dependent on the field. The *A* values are found to be practically const., and thus the validity of rule I in practice is demonstrated.

1. TELESNIN, R. V., KURITSYNA, Ye. F.

2. USSR (600)

4. Electromagnetism

7. Effect of demagnetizing field on magnetic cohesiveness. Dokl. AN SSSR 84, No. 3, 1952. Nauchno-Issledovatel' skiy Institut Fiziki Moskovskogo Gosudarstvennogo Universiteta im. M. V. Lomonosova. Rcd. 22 Nov 1951.

9. Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED

PA 241T90

TELESNIN, R. V.

USSR/Physics - Magnetic Viscosity Jul/Aug 52

"Some-Laws of Magnetic Viscosity," R. V. Telesnin,
Sci-Res Inst of Phys, Moscow State U

"Iz Ak Nauk, Ser Fiz" Vol 16, No 4, pp 465-470

It follows from exptl studies by author that what he named first law of magnetic viscosity, established by Street and Wolley (cf. Proc Phys Soc, 62, 357A (1949)) for velocity of variation of magnetization, is applicable to nickel, but does not hold for highly coercive alloys.

241T90

USSR/Physics - Demagnetization, Magnetic Viscosity 21 May 52

"Influence of the Demagnetizing Field on Magnetic Viscosity," R. V. Telesnin, Ye. F. Kuritsyna, Sci Res Inst of Phys, Moscow State U imeni Lomonosov

"Dok Ak Nauk SSSR" Vol LXXXIV, No 3, pp 477, 478

Finds rather close agreement between measured values of relaxation time and those computed according to values of differential susceptibility, thus demonstrating the correctness of the author's representation that viscosity is detd by the magnetic characteristics of the body and not of the substance, and that curves of

225T83

viscosity must be constructed as functions of the external and not int field. Submitted by Acad O. Yu. Shmidt 24 Mar 52.

225T83

TELESHIN, R. V.

D'YAKOV,G.P.; MIRYASOV,N.Z.; TELESNIN,R.V.

Nikolai Sergeevich Akulov; on his 50th birthday. Uch. zap. Mosk. un. no.162:3-7 '52. (MLRA 8:7)
(Akulov, Nikolai Sergeevich, 1900--)

TELESNIN,R.V.

Magnetic viscosity characteristics of ferromagnetic materials.
Uch. zap. Mosk. un. no.162:51-70 Ap '52. (MLRA 8:7)
(Ferromagnetism)

TELESNIN,R.V.; KURITSYNA,Ye.F.

Temperature dependence of magnetic viscosity of some ferromagnetic materials. Uch. zap. Mosk. un. no.162:125-130 '52.
(Ferromagnetism) (MIRA 8:7)

R. V. TELESNIN REVIEWER

257T88

USSR/Physics - **Magnetism** Mar 53

"Review of S. V. Vonsovskiy's Book 'Present-Day Science of Magnetism,'" (R. V. Telesnin reviewer)

Usp Fiz Nauk, Vol 49, No 3, pp 493-496

Favorably reviews S. V. Vonsovskiy's book "Present-day Science of Magnetism" (Sovremennoye Uchniye o Magnetizme), published by the State Publishing House of Technical-Theoretical Literature (Gosudarstvennoye Izdatel'stvo Tekhniko-Teoreticheskoy Literatury), Moscow-Leningrad, 1952 440 pages.

257T88

TELESNIN, R.V., doktor fiziko-matematicheskikh nauk, professor.

Physics faculty. Nauka i zhizn' 21 no.1:13-14 Ja '54. (MIRA 7:1)

1. Moskovskiy gosudarstvennyy universitet.

(Physics)

TELESHIN, R.V.,

"Magnetic Viscosity of Ni-Zn Ferrits on the Free and Forced Change of the Magnetization" Moscow

Conference on Physics of Magnetic Phenomena,
May 1956, Sverdlovsk, USSR

TELESNIN, R.V., professor (Moskva)

Atomic electric power plant operated by the Academy of Sciences of the U.S.S.R. Fiz. v shkole 16 no.2:9-18 Mr-Ap '56.(MLRA 9:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Atomic power)

TELESIN, R. V.

"On the Observation of the Magnetic Viscosity of Ferrites at Low Temperatures," by R. V. Telesnin and I. A. Lednev, Moscow State University, Doklady Akademii Nauk, USSR, Vol 112, No 1, Jan 57, p 48

The paper was presented by Academician I. K. Kikoin.

"At the lowering of temperature, the magnetic viscosity of the majority of the ferromagnets greatly increases, particularly that of the ferrites. This increase of the viscosity may be observed by an extremely simple method. On a toroidal ferrite specimen with a high initial permeability, μ_0 equal to about 2,000 gauss/oersted, two windings are applied: the primary is a magnetizing and the secondary is a measuring winding. The voltage from the secondary winding passing through a tube integrator or an ordinary integrating RC chain and an amplifier is fed to the vertical input of an oscillograph. The scanning voltage to the oscillograph is fed by an ordinary device through a resistance connected in series with the magnetizing toroidal winding. Through the magnetizing winding a current of low frequency is passed, for example, one of 50 cps. The amplitude of the current is chosen so that the ferrite is located in the H' field, at which the static curves of magnetization intersect. This is shown for the case of room temperature and the temperature of liquid nitrogen [Photo No 270557]. There the values of static magnetic permeability for these two temperatures are identical, and a decrease in inductance B at sufficiently low frequencies and temperatures may be conditioned only by the magnetic viscosity.

SUM. 1391

TELESNIN, R. V., LEDNEV, I. A., SHISHKOV, A. G. (Moscow)

"Magnetic viscosity of Ni-Zn Ferrits on the Free and Forced Change of the Magnetization," a paper submitted at the International Conference on Physics of Magnetic Phenomena, Sverdlovsk, 23-31 May 56.

CARD 1 / 2 PA - 1915

SUBJECT USSR / PHYSICS
AUTHOR TELESNIN,R.V., LEDNEV,I.A.
TITLE On Magnetic "Viscosity" (Inertia) of Ferrites at Low Temperatures.
PERIODICAL Dokl.Akad.Nauk, 112, fasc.1, 48-48 (1957)
Issued: 2 / 1957

If temperature drops, the magnetic viscosity of most ferromagnetica, particularly of ferrites, grows considerably. This increase of viscosity can be observed in a very simple manner: on to a toroid-shaped ferrite sample with the high initial permeability μ_0 ≅ 2000 Gauß/Ørsted two windings are wound: a primary magnetization winding and a secondary measuring winding; from the latter the voltage is transferred by way of a tube integrator or an ordinary integrating RC chain and an amplifier to the vertical input of an oscillograph. The unfolded voltage is then transferred in the usual manner on to the oscillograph from a resistance which is connected in series with the magnetic winding of the toroid. A low frequency current, e.g. of 50 c, is then sent through the magnetizing winding. The amplitude of the current is selected in such a manner that the ferrite located in a field with the field strength H' at which (according to the attached diagram) the magnetization curves recorded at room temperature and at the temperature of liquid nitrogen intersect. The values of static magnetic permeability are then equal at these two temperatures, and the induction B can be reduced only by magnetic viscosity if frequencies are sufficiently low and at low temperatures.

Dokl.Akad.Nauk, 112, fasc.1, 48-48 (1957) CARD 2 /,2 PA - 1915

A second diagram illustrates the oscillograms of the hysteresis loops of the ferrite O - 2000 (?) at the temperatures 293° K (a narrow and high loop) and 78° K (a broad and low loop). As will be seen from the diagram the reduction of induction is very considerable as a result of viscosity. This must be taken into account when constructing apparatus on the basis of ferrite which are able to operate at very low temperatures.

INSTITUTION: Moscow State University

TELESNIN, R.V

48-9-15/26

AUTHORS: Lednev, I. A., and Telesnin, R. V.

TITLE: Note on the Magnetic Viscosity of Ni-Zn Ferrites and its Behaviour on an Arbitrary Change of Magnetization (Magnitnaya vyazkost' Ni-Zn-ferritov pri svobodnom izmenenii namagnichennosti).

PERIODICAL: Izvestiya AN SSSR Seriya Fizicheskaya, 1957, Vol. 21, Nr 9, pp. 1280-1280 (USSR.).

ABSTRACT: This is a short abstract from a lecture more detailed in "Radiotekhnika i elektronika", 1, 1186, (1956). A new method was developed for measuring the magnetic viscosity with the help of an electronic timing schedule and of an pulse oscillograph, on the screen of which the curve of the EMF caused by the viscuous change of the magnetization was observed. The viscosity of a series of industrial Ni-Zn ferrites was investigated in the temperature range from 78°K to the Curie-point. It was established, that the slow as well the fast part of the viscosity can be expressed by modified formulae from the first law for the magnetic viscosity.
There are no figures and no references.

ASSOCIATION: Faculty for Physics of the Moscow State University imeni M. V. Lomonosov (Fizicheskiy fakultet Moskovskogo gos. universiteta imeni

Card 1/2

Note on the Magnetic Viscosity of Ni-Zn Ferrites and its Behaviour on an Arbitrary Change of Magnetization. 48-9-15/26

M. V. Lomonosova),

AVAILABLE: Library of Congress.

Card 2/2

TELESNIN, K.V.

AUTHORS: Telesnin, R.V., Shishkov, A.G., 56-4-2/54

TITLE: The Influence of Magnetic Viscosity on the Frequency Properties of Ferrites. (Vliyaniye magnitnoy vyazkosti na chastotnyye svoystva ferritov)

PERIODICAL: Zhurnal Eksperim.i Teoret.Fiziki, 1957, Vol.33, Nr 4,pp.839-844 (USSR)

ABSTRACT: The effect of the magnetic viscosity is measured by 2 methods:
a) Aperiodic regime: The sample is given the possibility of free exchange in the magnetization.
b) Forced regime: The magnetization is forced on the sample by a sinusoidal field with the frequency. f. The investigations were performed with 5 different samples and furnished the following characteristic results:

Nr of the sample	chemical composition $NiO \cdot Fe_2O_3$	$ZnO \cdot Fe_2O_3$	sintering temperature in °C	aperiodic regime τ_s max	τ_{CK} sec Oe/G	frequency properties s,Oe,sec	h_0 mOe
1	15,3	34,7	1350	20	$2,7 \cdot 10^{-8}$	$3,2 \cdot 10^{-6}$	35
2	17,4	32,6	1275	7	$3,3 \cdot 10^{-8}$	$0,9 \cdot 10^{-6}$	85
3	17,4	32,6	1320	25	$4 \cdot 10^{-8}$	$1,9 \cdot 10^{-6}$	60
4	17,4	32,6	1375	40	$4,3 \cdot 10^{-8}$	$2,2 \cdot 10^{-6}$	45
5	17,4	32,6	1400	21	$4,3 \cdot 10^{-8}$	$1,4 \cdot 10^{-6}$	40

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The Influence of Magnetic Viscosity on the Frequency Properties of Ferrites. 56-4-2/54

τ_{max} = maximum relaxation time
CK = portion of the no longer regressive susceptibility.

The dependence of the critical frequency of the 5 samples on H_0 is also given. There are 4 figures, 1 table and 5 Slavic references.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet)

SUBMITTED: April 2, 1957 (initially), July 4, 1957 (after revision)

AVAILABLE: Library of Congress.

Card 2/2

TELESNIN, R.V.

24-58-3-37/38

AUTHOR: Solomonov, M.

TITLE: Role and Importance of Magnetic Elements. Some Findings of the All-Union Conference on Magnetic Elements in Automation, Telemechanics and Computer Engineering (Rol' i znacheniye magnitnykh elementov. Nekotoryye itogi vsesoyuznogo soveshchaniya po magnitnym elementam avtomatiki, telemekhaniki i vychislitel'noy tekhniki)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 3, pp 174-175 (USSR)

ABSTRACT: This conference was convened by the Institut avtomatiki i telemekhaniki Akademii nauk SSSR (Institute of Automatics and Telemechanics, Academy of Sciences USSR) and the Komissiya po magnitnym usilitelyam i beskontaktnym magnitnym elementam (Commission on Magnetic Amplifiers and Contactless Magnetic Devices). It was held on Nov. 20-30, 1957 with the participation of 800 delegates, representing 240 research and industrial organisations. In the plenary meetings the following papers were read: B. S. Sotskov on "Present state and problems of developing magnetic elements for automation and telemechanics"; K. M. Polivanov on "Dynamic characteristics of elements of electric circuits"; R. V. Telesnin "The influence of magnetic viscosity on the process of remagnetization of cores"; M. A.

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24-58-3-37/38

Role and Importance of Magnetic Elements. Some Findings of the All-Union Conference on Magnetic Elements in Automation, Telemechanics and Computer Engineering.

Rozenblat on "Certain factors influencing the static and dynamic characteristics of toroidal cores"; E. T. Chernyshev, N. G. Chernysheva and E. N. Chedurina on "Present state of the problem of testing magnetic materials in dynamic regimes"; M. A. Rozenblat and O. A. Sedykh on "Fundamental principles of constructing (type) series of toroidal cores for magnetic amplifiers and contactless magnetic elements". A number of papers were read in two sections (magnetic amplifiers and discrete magnetic elements). Altogether 80 papers and communications were presented. These showed that in recent years successful results were obtained in the Soviet Union in the field of theory, development and application of various types of magnetic elements to automation, telemechanization and computer engineering. Application of magnetic elements brings about a considerable improvement in reliability and simplifies the design and operation of equipment. Depending on the type of the apparatus, use of static magnetic elements instead of electronic tubes, relays, amplidynes,

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24-58-3-37/38

Role and Importance of Magnetic Elements. Some Findings of the All-Union Conference on Magnetic Elements in Automation, Telemechanics and Computer Engineering.

etc. results in an increase in efficiency, reduction of dimensions, increased speed of response, a reduced power consumption, an increase in sensitivity and a reduction in the costs of apparatus and various other advantages. Simultaneous utilization of magnetic amplifiers and semiconductors will enable the solution of complicated technical problems and opens up wide prospects for further improvement of apparatus used in automation, remote control, computer and communication engineering.

Card 3/3

1. Telemechanics and Computer Engineers--Conference--USSR

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18(7) SOV/155-58-5-35/37

AUTHORS: Telesnin, R.V., Dmitriyeva, T.V., Matevosyan, S.A.

TITLE: On the Temperature Dependence of the Magnetic Viscosity of Iron and of Some Iron-Nickel Alloys

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1958, Nr 5, pp 205-210 (USSR)

ABSTRACT: The investigations of magnetic viscosity carried out by R.V. Telesnin, I.A. Lednev and others are continued in the paper. The authors measure the temperature dependence of the magnetic viscosity and of the conductivity of pure iron and of some alloys of iron with silicon and nickel. They use the method given in /Ref 4_7 (measurement of the timely variation of the electromotive force). The measurements are carried out for temperatures between 78° and 700° K. The authors state that the measured dependences do not only depend on the chemical composition but also on the geometric measurements of the test pieces. On the other hand the process for Fe-Si-alloys obviously takes a completely other course than for Fe or Fe-Ni-alloys.

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On the Temperature Dependence of the Magnetic Viscosity of Iron and of Some Iron-Nickel Alloys SOV/155-58-5-35/37

There are 6 figures, 1 table, and 7 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova (Moscow State University imeni M.V. Lomonosov)

SUBMITTED: April 11, 1958

Card 2/2

06480
SOV/141-1-5-6-24/28

AUTHORS: Telesnin, R.V., Il'icheva, Ye.N. and Chulkova, M.I.

TITLE: Dependence of the Magnetic Viscosity of Nickel-zinc Ferrites on Their Composition

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1958, Vol 1, Nr 5-6, pp 180-182 (USSR)

ABSTRACT: The aim of the present work was to study the magnetic viscosity as a function of the composition of nickel-zinc ferrites after they have been subjected to an aperiodic change in the field. The magnetic viscosity was measured as described in Ref 1. A toroidal ferrite specimen carrying a single 20-turn coil was included in the circuit of a 6P9 tube. The current which produces the magnetizing field (ΔH = 0.1 Oe) passed through the valve and the coil. The main magnetizing field H was produced by a current passing through the same coil and was derived from a battery. By varying the magnitude and direction of H, it was possible to bring the specimen to any point on the main magnetization curve or the back of the hysteresis loop. The introduction of the additional field ΔH enables one to take the specimen to a neighbouring point on the

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06480
SOV/141-1-5-6-24/28

Dependence of the Magnetic Viscosity of Nickel-zinc Ferrites on Their Composition

curve. The change in the magnetization of the specimen, which takes place at some finite rate, induces an emf in the coil and this is detected through a cathode follower on the screen of a CRO. Seven toroidal specimens were investigated and their percentage composition is shown in Table 1. Figure 2 gives the curves of the differential permeability as a function of H and the magnetic viscosity τ. The main maximum of the magnetic viscosity curve coincides with the maximum of the differential permeability curve. The second maximum lies to the left of this. The distance between the two peaks on the magnetic viscosity curve decreases as the curvature of the differential permeability curve increases.
There are 2 figures, 1 table and 5 Soviet references.

Card 2/3

06480

SOV/141-1-5-6-24/28

Dependence of the Magnetic Viscosity of Nickel-zinc Ferrites on Their Composition

ASSOCIATION: Fizicheskaya laboratoriya Voyenno-inzhenernoy akademii im. F.E. Dzerzhinskogo (Physics Laboratory of the Military Engineering Academy im. F.E. Dzerzhinskiy)

SUBMITTED: July 12, 1958

Card 3/3

TELESNIN R. V.

AUTHORS: Telesnin, R. V., Karchagina, Ye. V., 56-1-4/56

TITLE: On Magnetic Superviscosity of Ferrites (O magnitnoy sverkhvyaskosti ferritov)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 1, pp. 23-28 (USSR)

ABSTRACT: The authors studied the character of the diagram of magnetic supraconductivity in the case of ferrites of the series Ni-Zn at temperature of 78°K. This work examines the character of the modification of the magnetization in the case of superviscosity. A series of 6 test-pieces of Ni-Zn-ferrites, consisting of 16 molar percent NiO, 34 molar percent ZnO, the rest Fe_2O_3, was examined after 4 hours of roasting at temperatures of 1200°, 1250° 1270°, 1350°, and 1400°. The superviscosity has been studied at the back of the Hysteresis-loop by recording the curve of the electromotive force, which appears in the winding as a sequence, of the tough alteration of the magnetization. All the test-pieces formed superviscosity. The typical curves of the decrease of the viscous electromotive force is illustrated by two diagrams. This decrease lasted in the various cases of test - pieces from 33 to 2,5 seconds. In some test-pieces (ferrites with high dielectric constant) a new phenomenon was discovered: After an

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On Magnetic Superviscosity of Ferrites. 56-1-4/56

initial decrease of the lectromotive force a second peak followed, which was observed 6 to 7 seconds after the modification of field strength and in the case of a further increase of the field strength. The cuves for the dependence of the time taken for the decrease of the viscous electromotive force on the field strength H had two peaks. A second diagram illustrates the curves for the permanece τ of the second peak, for its amplitude A, and the curves of viscosity. If magnetic-field strength is low, the second peak is either very small or does not exist at all. The second maximum, which occurs in the case of further increasing field-strengths, continues increasing. Particularly the interesting influence of the jump of the magnetic field strength on the viscous alteration of the magnetization is discussed.The above mentioned facts can be interpreted by the theory about two types of magnetic viscosity existing, which further is discussed in this work. There are 6 figures, and 4 references, 2 of which are Slavic.

ASSOCIATION: Moscow State University (Moskovskiy gosudarstvennyy universitet)
SUBMITTED: July 4, 1957
AVAILABLE: Library of Congress

Card 2/2

24 (3)

AUTHORS: Telesnin, R. V., Kuritsyna, Ye. F. SOV/48-23-3-14/34

TITLE: On the Rate of Magnetic Polarity Reversal of Ferrites (O skorosti peremagnichivaniya ferritov)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 3, pp 352-356 (USSR)

ABSTRACT: In the present paper the authors investigated the mechanism of magnetic reversal of ferrite-toroids with rectangular hysteresis loop. Moreover, they also clarified the temperature dependence of the rate of magnetic reversal of different ferrites. The magnesium-manganese-ferrites used as matrix and commutation elements in computers were employed for the investigation. The rate of magnetic reversal was investigated according to the potential of the magnetic field, the temperature and the number of turns of the magnetizing winding. The block diagram of the apparatus which was used for the experiment is shown in figure 1. It was shown that the rate of magnetic reversal is mainly determined by the magnetic viscosity. The rate of magnetic reversal and all short-termed moment processes must be investigated in an oscillograph of very low capacity (5 - 7 pF) since otherwise

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On the Rate of Magnetic Reversal of Ferrites SOV/48-23-3-14/34

the duration of the moment would be distorted. The magnetizing moments must have very steep fronts and the coils must have not more than 1-2 turns. The investigations were carried out in a temperature range of from 78°K almost up to the Curie point. A very strong temperature dependence of the magnetic reversal coefficient S in the case of K-132-ferrite and a relatively low dependence in the case of ferrites K-28, K-65, PP-1, PP-4, PP-5, and PP-24 was found. Figure 2 shows the oscillogram of the magnetic reversal moment in weak fields for K-65-ferrites. The magnetic reversal isotherms for the same ferrite at 78 - 475°K and the temperature dependence of the magnetic reversal coefficient S are given in figure 3. The same curves are presented for K-132-ferrite on figure 4. Figure 5 shows the curves of temperature dependence S for the ferrites K-28, PP-1, PP-4, PP-5, and PP-24. There are 5 figures and 9 references, 3 of which are Soviet.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gos. universiteta im. M. V. Lomonosova (Physics Department of the Moscow State University imeni M. V. Lomonosov)

Card 2/2

24 (3)

AUTHORS: Telesnin, R. V., Shishkov, A. G. SOV/48-23-3-13/34

TITLE: The Influence of Magnetic Viscosity on the Frequency Properties of Ferrites (Vliyaniye magnitnoy vyazkosti na chastotnyye svoystva ferritov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1959, Vol 23, Nr 3, pp 343-351 (USSR)

ABSTRACT: Normally, the magnetic viscosity of materials is investigated by means of two independent methods: 1) the aperiodic change of the magnetic field, 2) the variable sinusoidal change of the magnetic field are used. In the present paper the two dependences are compared in the case of the change of the amplitude of the magnetic field, of the frequency, of the variable magnetic field and of temperature. Such investigations of the magnetic viscosity were carried out for the first time on the same sample by means of two methods. In order to facilitate the comparison under periodic conditions an "instantaneous" change of the magnetic field was brought about symmetrically (from $+H_o$ to $-H_c$). Accordingly, magnetization also changed from $I(+H_o)$ to $I(-H_c)$ in the

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The Influence of Magnetic Viscosity on the Frequency Properties of Ferrites

SOV/48-23-3-14/[illegible]

course of time.(Fig 1). 6 toroidal nickel-zinc-ferrite-samples (17.4 % mol NiO and 32.6 % mol ZnO) which were annealed in the course of 4 hours at different temperatures (1200-1[illegible]00°) were investigated. The results obtained at room temperature were described already earlier (Ref 7). In Figure 2 the dependence of magnetic viscosity on the potential of the magnetic field H_o at room temperature is given for samples. Similar measurements were carried out with all samples and at different temperatures. In this connection a regularity was observed: the viscosity of the ferrites increases with the decrease in temperature. The temperature dependence of viscosity, however, consists of the temperature dependence of magnetic permeability and of the constant of magnetic friction Ω. For this reason the temperature dependence τ/χ_{init} shown in figure 3 is especially important. The same samples were also investigated with respect to the dependence of frequency in the same fields as described in the first chapter of the paper. At a constant amplitude of the variable

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The Influence of Magnetic Viscosity on the Frequency Properties of Ferrites [illegible]

magnetic field H_o this proved - as was the case also in reference 7 - to be of the same type as in figure . In the case of sufficiently weak fields where there is only a reversible permeability and where the Barkhausen effects are lacking the magnetic permeabilities μ_1 and μ do almost not depend on the frequency. On figure 5 the dependence of the critical frequency f_{kr} on H_o at room temperature is represented for the Ni-sample. If the field tension is increased the dependence of the critical frequency becomes linear. Experiments have shown that such a bend of the curve is observed in relatively weak fields at any temperature. The magnitude of the critical field $h_o(T)$ may be easily determined from curves similar to those on figure 6 by extrapolating the linear part. According to reference 17 the amount of Ω S may be determined from the inclination of the curve towards the axis of coordinates. The values thus obtained of the samples investigated are given in figure 7. The temperature dependence of the critical fields h_o and

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the coercive force H_c are shown in figure 8. As could be expected the temperature dependence of h_0 almost totally reflects the temperature dependence of H_c. The comparison of the temperature course of the frictional constant Ω S with the temperature dependence of the "specific" magnetic viscosity τ/χ_{jump} also shows good agreement in a wide range. This confirms again that the quantity τ/χ_{jump} characterizes the quantity Ω. It is of special importance that with both methods (pulse and periodic conditions) a considerable intensification of the magnetic friction at a temperature decrease was obtained. The magnetic friction of metallic ferromagnetics is due to the electric conductivity and the inhibiting effect of the eddy microcurrents. There are 8 figures and 8 references, 7 of which are Soviet.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gos. universiteta im. M. V. Lomonosova (Physics Department of the Moscow State University imeni M. V. Lomonosov)

TELESNIN, R.V.; KURITSYNA, Ye.F.

Remagnetization rate of ferrites. Izv. AN SSSR. Ser. fiz. 23 no.3:352-356 Mr '59. (MIRA 12:5)

1. Fizicheskiy fakul'tet Moskovskogo gos. universiteta im. M.V. Lomonosova.

(Ferrates)

71

TELESNIN, R.V.

PHASE I BOOK EXPLOITATION SOV/5526

Vsesoyuznoye soveshchaniye po magnitnoy strukture ferromagnetikov, Krasnoyarsk, 1958.

Magnitnaya struktura ferromagnetikov; materialy Vsesoyuznogo soveshchaniya, 10 - 16 iyunya 1958 g., Krasnoyarsk (Magnetic Structure of Ferromagnetic Substances; Materials of the All-Union Conference on the Magnetic Structure of Ferromagnetic Substances, Held in Krasnoyarsk 10 - 16 June, 1958) Novosibirsk, Izd-vo Sibirskogo otd. AN SSSR, 1960. 249 p. Errata slip inserted. 1,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut fiziki Sibirskogo otdeleniya. Komissiya po magnetizmu pri Institute fiziki metallov OFMN.

Resp. Ed.: L. V. Kirenskiy, Doctor of Physical and Mathematical Sciences; Ed.: R. L. Dudnik; Tech. Ed.: A. F. Mazurova.

PURPOSE: This collection of articles is intended for researchers in ferromagnetism and for metal scientists.

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71

Magnetic Structure (Cont.) SOV/5526

COVERAGE: The collection contains 38 scientific articles presented at the All-Union Conference on the Magnetic Structure of Ferromagnetic Substances, held in Krasnoyarsk in June 1958. The material contains data on the magnetic structure of ferromagnetic materials and on the dynamics of the structure in relation to magnetic field changes, elastic stresses, and temperature. According to the Foreword the study of ferromagnetic materials had a successful beginning in the Soviet Union in the 1930's, was subsequently discontinued for many years, and was resumed in the 1950's. No personalities are mentioned. References accompany individual articles.

TABLE OF CONTENTS:

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Shur, Ya. S. [Institut fiziki metallov AN SSSR - Institute of Physics of Metals, AS USSR, Sverdlovsk]. On the Magnetic Structure of Ferromagnetic Substances 5

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Electric Resistance of Iron at Low Temperatures 73

Kaganov, M. I. [Physicotechnical Institute AS UkrSSR, Khar'kov]. Influence of the Hall Effect on the Resistance of Ferromagnetic Substances 79

Krinchik, G. S. [Physics Department of the Moscow State University]. Structure of the Domain Boundary and Dynamic Properties of Ferromagnetic Substances 85

Telesnin, R. V., and Ye. P. Dzaganiya [Physics Department of the Moscow State University]. On the Delayed Jumps in Magnetization 91

Ivlev, V. F., and V. M. Rudyak [Pedagogicheskiy institut - Teachers Institute, Krasnoyarsk]. Statistical Distribution of Remagnetization Jumps by Magnitudes 101

Rodichev, A. M., V. A. Ignatchenko, and N. M. Salanskiy [Institute of Physics, Siberian Branch AS USSR, Krasnoyarsk].

TELESNIN, Roman Vladimirovich; YAKOVLEV, Vitaliy Fedorovich; SADIKOV, B.A., red.; KREYS, I.G., tekhn. red.

[Course in physics; electricity] Kurs fiziki; elektrichestvo. Moskva, Gos. uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1960. 455 p. (MIRA 14:5)

(Electricity) (Magnetism)

TELESNIN, R. V.

PHASE I BOOK EXPLOITATION SOV/4893

Vsesoyuznoye soveshchaniye po fizike, fiziko-khimicheskim svoystvam ferritov i fizicheskim osnovam ikh primeneniya. 3d, Minsk, 1959

Ferrity; fizicheskiye i fiziko-khimicheskiye svoystva. Doklady (Ferrites; Physical and Physicochemical Properties. Reports) Minsk, Izd-vo AN BSSR, 1960. 655 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: N. N. Sireta, Academician of the Academy of Sciences BSSR; K. P. Belov, Professor; Ye. I. Kondorskiy, Professor; K. M. Polivanov; Professor; R. V. Telesnin, Professor; G. A. Smolenskiy, Professor; N. N. Shol'ts, Candidate of Physical and Mathematical Sciences; E. M. Smolyarenko; and L. A. Bashkirov; Ed. of Publishing House: S. Kholyavskiy; Tech. Ed.: I. Volokhanovich.

PURPOSE: This book is intended for physicists, physical chemists, radio electronics engineers, and technical personnel engaged in the production and use of ferromagnetic materials. It may also be used by students in advanced courses in radio electronics, physics, and physical chemistry.

COVERAGE: The book contains reports presented at the Third All-Union Conference on Ferrites held in Minsk, Belorussian SSR. The reports deal with magnetic transformations, electrical and galvanomagnetic properties of ferrites, studies of the growth of ferrite single crystals, problems in the chemical and physicochemical analysis of ferrites, studies of ferrites having rectangular hysteresis loops and multicomponent ferrite systems exhibiting spontaneous rectangularity, problems in magnetic attraction, highly coercive ferrites, magnetic spectroscopy, ferromagnetic resonance, magneto-optics, physical principles of using ferrite components in electrical circuits, anisotropy of electrical and magnetic properties, etc. The Committee on Magnetism, AS USSR (S. V. Vonsovskiy, Chairman) organized the conference. References accompany individual articles.

Ferrites (Cont.) SOV/4893

Samokhvalov, A. A., and I. G. Fakidov. The Electrical Properties of Magnetite (Electrical Conductance, Galvanomagnetic, Thermoelectric, and Thermomagnetic Properties of Magnetite in the Temperature Range of 80 - 400°K) 272

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→ Telesnin, R. V. and Ye. P. Kuritsyna. Temperature Dependence of Some Properties of Manganese-Zinc Ferrites 320

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TELESNIN, R.V.

PHASE I BOOK EXPLOITATION SOV/4893

Vsesoyuznoye soveshchaniye po fizike, fiziko-khimicheskim svoystvam ferritov i fizicheskim osnovam ikh primeneniya. 3d, Minsk, 1959

Ferrity; fizicheskiye i fiziko-khimicheskiye svoystva. Doklady (Ferrites; Physical and Physicochemical Properties. Reports) Minsk, Izd-vo AN BSSR, 1960. 655 p. Errata slip inserted. 4,000 copies printed.

Sponsoring Agencies: Nauchnyy sovet po magnetizmu AN SSSR. Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR.

Editorial Board: Resp. Ed.: N. N. Sirota, Academician of the Academy of Sciences BSSR; K. P. Belov, Professor; Ye. I. Kondorskiy, Professor; K. M. Polivanov, Professor; R. V. Telesnin, Professor; G. A. Smolenskiy, Professor; N. N. Shol'ts, Candidate of Physical and Mathematical Sciences; E. M. Smolyarenko; and L. A. Bashkirov; Ed. of Publishing House: S. Kholyavskiy; Tech. Ed.: I. Volokhanovich.

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Ferrites (Cont.) SOV/4893

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S/188/60/000/005/007/010
B019/B056

24,2200 (1035,1160,1162)

AUTHORS: Telesnin, R. V., Dzaganiya, Ye. P., Kozlov, V. I.

TITLE: Delayed Jumps of the Intensity of Magnetization

21

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika, astronomiya, 1960, No. 5, pp. 60 - 67

TEXT: The authors investigated the delayed jumps of intensity of magnetization of iron-nickel alloys with 50% nickel. The thickness of the samples was 5 - 100 microns. By delayed jumps of magnetization, the authors understand Barkhausen jumps, which occur some time after the change in the external magnetic field. The samples were produced according to the production rules of the TsNIIChYeRMYeT. As may be seen from the results shown in diagrams, the ranges of the field strength in which Barkhausen jumps occur, are extended with increasing coercive force of the sample. A decrease or an increase of the field strength shifts the distribution curve of the Barkhausen jumps into the range of stronger or weaker fields. Further, a temperature dependence of the total number was observed. The occurrence of two maxima in the curve representing the

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Delayed Jumps of the Intensity of Magnetization

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number of jumps as a function of the external field strength, indicates the existence of several magnetic phases with different coercive forces. In the case of fields near coercive force, the relation $N = N_0(1-e)^{-t/\tau}$ (1) exists for the number of delayed jumps and $\tau = 10$ sec holds for 5 micron, $\tau = 4$ sec for 100 micron, and $\tau = 0.8$ sec for 20-micron samples. There is therefore an optimal thickness for a minimal τ. Further, it was found that for each sample a certain temperature exists, at which a maximum of delayed jumps occurs. There are 3 figures and 4 Soviet references.

ASSOCIATION: Kafedra obshchey fiziki dlya fizikov (Department of General Physics for Physicists)

SUBMITTED: March 19, 1960

Card 2/2

SOV/47-60-1-5/46

(

AUTHOR: Telesnin, R.V. Professor

TITLE: Anatoliy Boleslavovich Mlodzeyevskiy (1883-1959)

PERIODICAL: Fizika v shkole, 1960, Nr 1, pp 29-30 (USSR)

ABSTRACT: This is a biography of the late Professor of Physics A.B. Mlodzeyevskiy. He began his scientific career , when still a student, in the laboratory of the famous Russian physicist Petr Nikolayevich Lebedev, together with the famous physicists P.P. Lazarev, V.K. Arkad'yev, N.A. Kaptsov, B.V. Il'in, K.P. Yakovlev, A.K. Timiryazev, N.P. Neklepayev, V.Ya. Al'tberg, V.D. Zernov, P.V. Leyberg, A.R. Kolli, M.V. Vil'borg, Ye.V. Bogoslovskiy, T.P. Kravets, N.K. Shchodro, N.Ye. Uspenskiy and others. From 1911 till 1917 he worked in the crystallographic laboratory of Professor Yu.V. Vul'f. From 1914 till 1920, he was assistant to Professor of Physics A.A. Eykhenval'd in the Institut inzhenerov putey soobshcheniya (Institute of Engineers of Ways

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SOV/47-60-1-5/46

Anatoliy Boleslavovich Mlodzeyevskiy (1883-1959)

of Communication), from 1924 till 1929 - Professor of the Moskovskoye vyssheye tekhnicheskoye uchilishche (**Moscow Higher Technical School**), from 1918 till 1930, he also worked in the 2-oy Moskovskiy gosudarstvennyy universitet (2-nd Moscow State University), and then in the Institut tonkoy khimicheskoy tekhnologii (Institute of Fine Chemical Technology). He wrote scientific works, some of which are named, and besides being an outstanding scientist, he was an excellent teacher and lecturer. For a number of years he was Chairman of the Uchebno-metodicheskiy sovet Ministerstva prosveshcheniya RSFSR (Educational Methods Council of the Ministry of Education of the RSFSR). ✓

ASSOCIATION: MGU, Moscow

Card 2/2

TELESNIN, R.V., prof., doktor fiz.-mat.nauk (Moskva)

Electrical properties of metals and semiconductors. Fiz.v shkole 20 no.4:17-24 Jl-Ag '60. (MIRA 13:8)

(Metals--Electrical properties)
(Semiconductors--Electrical properties)

TELESNIN, R.V., prof., doktor fiziko-matematicheskikh nauk (Moskva)

Magnetic properties of matter. Fiz. v shkole 20 no.5:21-27 S-O '60.
(MIRA 13:11)

(Magnetism) (Ferromagnetism)

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B108/B209

AUTHORS: Telesnin, R. V., Ovchinnikova, A. M.

TITLE: Temperature dependence of the magnetic viscosity of garnet-type ferrites

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika, astronomiya, no. 1, 1961, 29-35

TEXT: The authors examined the magnetic viscosity of garnet-type ferrites of the stoichiometric composition $5Fe_2O_3 \cdot 3M_2O_3$, where M stands for any of the rare-earth elements Gd, Tb, Dy, Ho, Er, Tu, Yb, Lu, and Y. The carefully powdered oxides were pressed at about 800 kg/cm^2, and then annealed at 1000°C for 6 hr. After this, they were ground once again, pressed into toroids at a pressure of 7.4 tons/cm^2, and then annealed at 1350°C for 8 hr. A table shows the chief properties of the samples. The investigations were carried out by a method described in Refs. 1 and 2 (Telesnin R. V., Kuritsyna Ye. F. Ferrity. Izd-vo AN BSSR, Minsk, 1960, str. 320 and Ovchinnikova, A. M. Vestn. Mosk. un-ta, ser. fiziki, astronomii, no.2,

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Temperature dependence of the...

1960, respectively). The time of remagnetization was taken as a measure for the magnetic viscosity. The ferrites of Y (specimen 1), Gd, Tu, and Lu all showed the same qualitative behavior: decrease in magnetic viscosity between 77 and 170°K, rise between 170 and 200°K, maximum between 200 and 210°K, decrease, and another but small maximum at Curie temperature (about 560°K). The first maximum varies from 50 (Lu) to 145 μsec (Gd). At 77°K, the time of remagnetization, τ, rises when the remagnetizing field decreases to H = 3.34 oersteds (for Gd). In the temperature range between 170 and 200°K, two types of viscosity processes appear simultaneously, the first of which becomes less distinct with rising temperature, giving way to the second type which exists until the Curie point. The ferrites of Y (specimen 2), Dy, Ho, Er, and Yb show only one type of viscosity with a maximum at the Curie point. Between 350 and 500°K, all samples show the same behavior: Their viscosity is nearly independent of temperature. This is explained by the fact that from about 350°K onward viscosity is effected by iron ions only. The yttrium ferrite no. 2 was prepared by the method described, while specimen no. 1 was obtained by a method described in a previous paper of the authors (Ref. 4: Ferrity. Izd-vo AN BSSR, Minsk, 1960, str. 325),

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Temperature dependence of the...

where the time of final heat treatment (1380°C) was 2 hr. It is possible that a second phase, viz. magnetite, has formed in the first yttrium specimen and thus affects viscosity. There are 4 figures, 1 table, and 5 references: 3 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: Van Uitert a. Swanekamp F. W. J. Appl. Phys., 28, no. 12, 1513, 1957.

ASSOCIATION: Kafedra obshchey fiziki dlya fizikov (Department of General Physics for Physicists)

SUBMITTED: June 24, 1960

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25800
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B117/B201

24.2200

AUTHORS: Nikitina, T. N., and Telesnin, R. V

TITLE: System for the study of pulsed magnetic reversal of thin ferromagnetic films

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 5, 1961, 619-621

TEXT: The present investigation was the subject of a lecture delivered at a symposium on thin ferromagnetic films (Krasnoyarsk, July 4 to 7, 1960) To study the pulse properties of thin magnetic films the authors constructed a generator on the principle of the discharge of a long line over a hydrogen thyratron of the type ТГИ1-130/10 (TGI1-130/10) (Fig. 1). The generator is designed in the form of a coaxial line. This ensures the matching of the forming line with the load and makes it possible for parasitic parameters to be reduced to a minimum. The thyratron is inserted into the central conductor (Fig. 2). The total line length is 3.5 m. The duration of the pulse front is 4 -- $5 \cdot 10^{-9}$ sec (corresponding

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